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## AIX System Administration - Part I

**Duration: 5 Days**    **Course Code: ASA1**    **Delivery Method: Virtual Learning**

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### Overview:

#### AIX System Administration - Part I Course Overview

This IBM AIX System Administration training course is designed to give delegates practical experience in the administration of an AIX System. Reference will be made to the AIX commands required to administer the system, although practical work, where applicable, will concentrate on using the System Management Interface Tool (SMIT) to achieve the course objectives. Similarly, the course is targeted to closely follow the official IBM AIX curriculum for certification. Although the course is based on AIX Version 7.1 it is also appropriate for prior releases of AIX. Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.

#### Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

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### Target Audience:

#### Who will the Course Benefit?

The course is designed for AIX System Administrators and Programmers and other Technical IT staff who require a full working knowledge of how to administer an AIX system.

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### Objectives:

- Course Objectives
  - On completion of the AIX System Administration - Part I course the delegate will have practical experience of the Systems Management Interface Tool (SMIT), allowing them to administer an IBM AIX System.
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### Prerequisites:

- This AIX System Administration - Part I course assumes good knowledge of a Unix operating system in an Enterprise environment to the level covered in the AIX Basics course. Alternatively, relevant experience of Unix or Linux servers is required, preferably within an Enterprise environment.

Knowledge of AIX Shell Programming to the level covered on the AIX Shell Programming course would also be beneficial but is not essential. This skill can be gained by attending the AIX Shell Programming course.

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## Follow-on-Courses:

### Further Learning

- AIX System Administration - Part II
  - AIX Shell Programming
  - AIX Advanced Shell Programming Tools
  - Oracle SQL
  - Apache Web Server
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## Content:

### AIX System Administration - Part I Training Course Course Contents - DAY 1

#### Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

#### Session 1: INTRODUCTION TO THE P-SERIES AND AIX

- A Brief History
- RISC Technology
- IBM Power Systems Road Map
- The AIX Operating System
- Useful Commands

#### Session 2: STARTUP AND SHUTDOWN

- Normal Startup
- The Boot Sequence
- The INIT Process
- AIX Run Levels
- The System Resource Controller
- The ALOG Logging Utility
- System Shutdown Methods
- Workshop Session

#### Session 3: AIX ADMINISTRATION TOOLS

- System Management Tools
- SMIT
- SMIT Dialogue Screens
- SMIT Special Characters And Keys
- SMIT and Functions Keys
- SMIT Output Screen
- Recording SMIT Sessions
- The smit Command
- Workshop Session

#### Session 4: AIX ON-LINE DOCUMENTATION

- AIX Documentation
- The man Command
- Web Based IBM AIX Documentation
- Infocenter
- Anatomy of the Infocenter
- Workshop Session AIX System Administration - Part I Training Course Course Contents - DAY 2

#### Session 5: SOFTWARE INSTALLATION AND MAINTENANCE

- Software Installation
- Software - Units of Installation
- Bundles
- Naming Conventions
- Installation Directories
- Update and Maintenance Bundles
- The Fix Level Recommendation Tool (FLRT)

#### Session 6: DEVICES

- Devices
- Predefined Database
- Customized Database
- Device States
- AIX Location Codes (Non-SCSI Devices)
- AIX Location Codes (SCSI Devices)
- AIX Location Codes VS Physical Location Codes
- Listing Devices
- Configuring Devices
- Manually Configured Devices
- Smit Devices Menu
- The mkdev Command
- The chdev Command
- The rmdev Command
- Useful Device Names to Remember
- Logical Volume Structures
- Documenting Hardware Setup
- Workshop Session AIX System Administration - Part I Training Course Course Contents - DAY 3

#### Session 7: USERS AND GROUPS

- Users and Groups In AIX
- The /etc/passwd File
- Long User and Group Name Support
- Verify and Change User Name Limit
- Verify and Change User Name Limit through the Command Line
- Listing User Information
- Adding a New User
- The /etc/group File
- Registering a New User
- Adding Users
- Adding a Group
- More about Groups
- More about Users
- Removing Users from the System
- Other Useful Commands
- Workshop Session

#### Session 8: AIX SECURITY FEATURES

- The security Directory
- The /etc/security/passwd File
- The /etc/security/user File
- The /etc/security/login.cfg File
- The /etc/security/group File
- Security Audit File
- Losing the Root User's Password
- Role Based Access Control
- Privileged Escalation with Set User Identification (SUID)
- Adding a Role to a User
- Creating a User Defined Role
- The Root User and Enhanced RBAC
- Disabling the Root User
- Enabling the Root User
- Disabling root user in WPARs
- Workshop Session

#### Session 13: SCHEDULING JOBS

- Starting Background Jobs
- The nohup Command
- Using cron Processes
- Creating cron Processes
- Creating crontab Entries
- Using the crontab Command
- The at Command
- Authorisation for the at Command
- Creating a crontab Entry
- Using the at Command
- Workshop Session

#### Session 14: BASIC NETWORKING

- Overview
- Testing Network Connectivity
- Network Configuration at Boot Time
- Using Ifconfig Commands to Configure a NIC in Aix
- How to Disable/Enable a Network Interface
- Assign an IP,Netmask,and Broadcast to Network Interface
- Using mktcpip Commands to Configure a NIC In Aix
- Difference Between Ethernet Interface(en0) and Ethernet Adapter (ent0)
- Network Addressing
- Routing
- Displaying Routing Tables
- Network Information Files
- Network Commands
- User Equivalence
- Displaying Network Details
- Copying File
- Executing Remote Commands

#### Session 15: NFS

- NFS Terminology
- NFS Server and Client Environment
- Server Side NFS
- Client Side NFS
- Setting Up NFS Using SMIT

#### Session 16: INTRODUCTION TO WORKLOAD PARTITIONS (wpar)

- What are Workload Partitions?
- System WPARs
- System WPARs Observations
- System WPAR Examples
- WPAR File Systems
- Starting a WPA
- Logging in to a WPAR
- Stopping a WPAR
- Rebooting a WPAR
- Changing a WPAR
- Removing a WPAR
- Application WPARs
- Application WPARs Observations
- Application WPAR Examples

- Software States
- SMIT Installation Menus
- Install and Update Software
- Installing Bundles
- Installing Patches and Fixes
- Finding Out About Installed Software
- Maintaining Software
- Workshop Session

#### Session 9: THE LOGICAL VOLUME MANAGER

- The Logical Volume Manager
- AIX Disk Storage
- Physical Volumes and LVM
- Volume Group Descriptor Areas
- SMIT and Volume Groups
- Physical and Logical Storage
- Scalable Volume Groups
- Uses of Logical Volumes
- Mirroring
- LVM Hot Spare Disk in a Volume Group
- Enabling Hot Spare Disk Support in an Existing Volume Group
- Striping
- Disk Placement Policies
- Creating and Managing Logical Volumes
- Migrating Contents of Physical Volumes
- Other Useful Commands
- Workshop Session AIX System Administration - Part I Training Course Course Contents - DAY 4

#### Session 10: PAGING SPACE

- What is Paging Space?
- Paging Space Calculations
- Paging Space Placement on Disk
- Listing Paging Space
- Adding Paging Space:
- mkps Command
- smit mkps
- Changing Paging Space:
- chps Command
- smit chps
- Removing Paging Space:
- rmps
- smit rmps

#### Session 11: AIX FILE SYSTEMS

- AIX Filesystems
- AIX Supported Filesystems
- JFS Structure
- The Enhanced Journaled File System
- Dynamic Disk Inode Allocation
- On-Line File System Free Space Defragmentation
- JFS2 Enhancements
- JFS2 File System Shrink
- Shrink A File System Using Smit
- Disabling JFS2 logging
- JFS2 Snapshot Image
- Overview of JFS2 Snapshot
- Creation of a JFS2 Snapshot
- JFS Internal Snapshot
- Listing File System Information
- AIX 7.1 /admin/tmp System Directory
- Mount Points
- SMIT and Journaled File Systems
- Building A JFS on a Logical Volume
- Managing Existing Filesystems
- Checking and Repairing File Systems

- Application / System WPAR Comparisons
- Workshop Session AIX System Administration - Part I Training Course Addendum: Reference Materials (Sections below are provided within the course handbook for additional reading)

#### Session 20: Appendix A

- AIX TECHNOLOGY LEVELS AND SERVICE PACKS

#### Session 21: Appendix B

- LOGICAL VOLUME SPREADING

- Removing a File System
- Workshop Session

#### Session 12: BACKUP AND RESTORE

- Backup and Restore
- Backup Media
- The mksysb and savevg Functions
- The backup Command
- The restore Command
- Using the cpio Command
- The cpio -o Command
- Using the find Command with cpio
- The cpio -i Command
- Using the cpio -p Command
- Using the tar Command
- Creating an Archive
- Reading/Verifying an Archive Further tar Options
- Tape Control Commands
- Workshop Session AIX System Administration - Part I Training Course Course Contents - DAY 5

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#### Further Information:

For More information, or to book your course, please call us on 0800/84.009

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[www.globalknowledge.com/en-be/](http://www.globalknowledge.com/en-be/)